

## REMARKS

This is intended as a full and complete response to the Office Action dated March 23, 2007, having a shortened statutory period for response set to expire on June 23, 2007. Claims 1-17 have been examined. The Examiner rejected claims 1 and 8-10 under 35 U.S.C. § 103(a) as being obvious over Sugawara (US Patent No. 6,057,951) and Cornelius (US Patent No. 6,522,461). The Examiner rejected claims 2, 3, and 5-7 under 35 U.S.C. § 103(a) as being obvious over Sugawara, Cornelius, and Hatakeyama (US Patent No. 5,517,351). The Examiner rejected claim 4 under 35 U.S.C. § 103(a) as being obvious over Sugawara, Cornelius, Hatakeyama, and Yamamoto (US Patent No. 5,710,660). The Examiner rejected claims 11-17 under 35 U.S.C. § 103(a) as being obvious over Sugawara, Cornelius, and Shi (US Publication 2005/0031355).

### *Claim Objections*

The Examiner objected to claims 1-7 due to informalities. In response, Applicants have amended claims 1-7 accordingly. Therefore, Applicants respectfully request the objection to the claims 1-7 be removed and allowance of the same.

### *Claim Rejections Under 35 U.S.C. § 112*

The Examiner rejected claims 8-10, 16, and 17 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In response, Applicants have amended claims 8-10, 16, and 17 accordingly. Therefore, Applicants respectfully request the rejection of the claims 8-10, 16, and 17 be removed and allowance of the same.

### *Claim Rejections Under 35 U.S.C. § 103(a)*

The Examiner rejected claims 1 and 8-10 as being obvious over Sugawara and Cornelius. The Examiner rejected claims 2, 3, and 5-7 as being obvious over Sugawara, Cornelius, and Hatakeyama. The Examiner rejected claim 4 as being obvious over Sugawara, Cornelius, Hatakeyama, and Yamamoto. The Examiner rejected claims 11-17 as being obvious over Sugawara, Cornelius, and Shi. In response, Applicants have amended claims 1, 8, and 11.

As amended, claims 1 and 11 include the limitations of (i) an optical pre-amplifier for

receiving an input light signal, the optical pre-amplifier employing no carrier filters in the optical pre-amplifier, wherein the optical pre-amplifier includes a pump laser and coupled to an optical multiplexer (ii) a control loop, coupled to the transimpedance amplifier, for adjusting the optical signal generated by the pre-amplifier relative to the output electrical voltage signal generated by the transimpedance amplifier, wherein the control loop is configured to maintain the input light signal sent to the PIN diode substantially constant. As amended, claim 8 includes the limitation of (i) receiving an input light signal by a pre-amplifier, (ii) converting the input light signal into an electrical current signal by a PIN diode (iii) amplifying and converting the electrical current signal to produce an output electrical voltage signal without carrier filtering and (iv) feeding the output electrical voltage signal back for maintaining the PIN input light signal substantially constant by correlating the output electrical voltage signal to the intensity of the input light signal by adjusting the gain of the pre-amplifier.

The references cited by the Examiner do not teach these limitations. For example, Sugawara merely discloses a control circuit that is configured to increase or reduce the pump laser drive current of the optical fiber amplifier such that an error signal becomes zero (see Sugawara, col. 1, lines 44-50). Cornelius discloses a controller configured to control a pump power level based upon indication of a loss of signal (LOS) when the pump power level reaches or exceeds a threshold value (see Cornelius, col. 12, lines 1-19). Moreover, neither Sugawara nor Cornelius discloses an optical pre-amplifier having a pump laser coupled to an optical multiplexer. Further, Hatakeyama discloses a controller configured to control the output of a pump light by utilizing a peak value of an electric signal and a mark-space ratio of the electric signal and therefore fails to cure the deficiencies of the combination of Sugawara and Cornelius. Yamamoto discloses an optical amplifier having a plurality of cascaded optical amplifying units and a pump source controller and therefore fails to cure the deficiencies of the combination of Sugawara and Cornelius. Shi discloses an adaptive transponder and therefore fails to cure the deficiencies of the combination of Sugawara and Cornelius.

As the forgoing illustrates, that combination of Sugawara and Cornelius and/or Yamamoto and/or Hatakeyama and/or Shi fails to disclose all the limitations in claims 1, 8, and 11. This failure precludes the combination of Sugawara and Cornelius and/or Yamamoto and/or Hatakeyama and/or Shi from rendering claims 1, 8, and 11 obvious. Applicants therefore submit

that claims 1, 8, and 11 are in condition for allowance and respectfully request withdrawal of the § 103(a) rejection. Additionally, since claims 2-7 and new claim 18 depend from claim 1, claims 9-10 depend from claim 8, and claims 12-17 and new claims 19-20 depend from claim 11, these claims are allowable for at least the same reasons as claims 1, 11, and 16.

***Conclusion***

Having addressed all issues set out in the office action, Applicants respectfully submit that the case is in condition for allowance. If the Examiner has any questions, please contact the Applicants' undersigned representative at the number provided below.

Respectfully submitted,



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